## REMARKS

This Amendment is responsive to the Office Action mailed on July 12, 2004. Claims 1-34 are pending in the application. The Examiner has objected to Figure 1 as to reference number 28 being used to designate the engine control unit and the silencer/mixer. Applicants submit a replacement drawing for Figure 1, wherein the silencer/mixer is now denoted by reference number 29. Withdrawal of the objection to the drawing is respectfully requested. Corresponding amendments have also been made to the specification at page 11. No new matter has been introduced as a result of these amendments.

The Examiner has rejected Claims 1-34 under 35 U.S.C. 102(e) as being anticipated by Itoh et al. (U.S. Patent No. 6,725,651). This rejection is respectfully traversed.

Discussion of Prior Art

The Itoh et al. reference fails to disclose each of Applicants' claimed elements.

The Itoh et al. reference discloses an emission control system which uses a reducing agent. The emission control system is provided for a diesel engine 50 including a plurality of cylinders each of which has a piston 6 partially defining a combustion chamber 51. An exhaust gas emitted from each combustion chamber 51 is discharged into the atmosphere through an exhaust pipe 7, a NOx catalytic converter 8 and a downstream exhaust pipe 9. The NOx catalytic converter 8 houses a zeolite-silica-based NOx catalyst 10 of selective-reduction type for reducing or decomposing NOx in the exhaust gas, in the presence of a reducing agent (Col. 6, line 56 through Col. 7, line 5).

The exhaust pipe 7 is further provided, at a portion thereof upstream of the incoming-gas temperature sensor 19, with a NOx sensor 21 for measuring the amount of NOx contained in the exhaust gas (Col. 8, lines 44-47). The ECU 16 is arranged to perform not only basic engine controls, such as a fuel injection control of the diesel engine 50, but also a reducing-agent introduction control for controlling the reducing-agent supply device 11 to control the

**Amendments to the Drawings:**

The attached sheets of drawings include changes to Figure 1. The new Figure 1 replaces the original sheet filed with the application.

Appendix: Replacement sheet
Annotated sheet showing changes

introduction of the reducing material including the solid urea 1 into the exhaust pipe 7 (Col. 8, line 64 to Col. 9, line 2).

The Itoh et al. reference is silent with respect to the concept of temporarily detecting respective NOx emissions at each of the engine operating conditions as set forth in Applicants' claim 1. The Itoh et al. reference is silent with respect to the concept of a temporary NOx detector for detecting respective NOx emissions of the exhaust at each of said engine operating conditions as set forth in Applicants' claim 18.

Applicants' recite in claims 1 and 18 that the NOx detector is temporarily installed on the vehicle. The purpose of the temporary NOx detector is to provide data from measurements of the exhaust generated under various operating conditions of the particular engine in the vehicle. Various engine operating parameters are also measured. Based on the measured NOx mass flow and the engine operating parameters, an injection strategy which determines the quantity of reagent required to be injected into the exhaust system for the various engine operating conditions can be developed (e.g., see Applicants' specification at page 10, lines 13-30). For example, the injection strategy (i.e., injection map) can be developed through use of the data collected during a one time learn period during the time at which the temporary NOx detector is installed. Once the injection strategy is developed, the temporary NOx detector can be removed from the exhaust system and is no longer required for the injection of the reagent. In this manner, the engine reagent mass flow may be accurately estimated for open loop operation via the data recorded during the learn period. For example, algorithms can automatically develop the injection strategy based on the data collected from the temporary NOx detector (e.g., see Applicants' specification at page 11, lines 1-9).

In contrast, the emission control system of the Itoh et al. reference requires a permanent NOx sensor 21 for controlling the injection of the reducing agent in a closed-loop feedback controlled system. The Itoh et al. reference does not disclose or even remotely suggest the concept of a temporary NOx detector and development of an injection strategy through temporarily detecting respective NOx emissions at each of the engine operating conditions.

Applicants' claimed invention as set forth in Applicants' claims and taught in Applicants' specification distinguish from the Itoh et al. reference. Applicants' claimed system can be easily

retrofitted on a vehicle at lower costs. Once the injection strategy has been developed as a result of the data collected with the temporary NOx detector installed, the temporary NOx detector can be removed from the system. The NOx detector can then be temporarily installed on another vehicle to develop an injection strategy for the vehicle thereby obviating the need to purchase separate NOx detectors for each vehicle in a fleet. The use of Applicants' novel system and method allow for the retrofitting of a catalyst reduction system to existing mobile diesel truck fleets without extensive downtime, engine removal, dynamometer tests, or long transport to engine test facilities. Additionally, by providing a temporary NOx detector that is removed from the vehicle, the expensive, difficult to install and unreliable NOx detector cannot play a role in failure rates within the emissions reduction system.

The system of Itoh et al. does not provide any of the aforesaid advantages. For example, with the system of the Itoh et al. reference, each vehicle requires its own NOx sensor, increasing expense for fleet owners. Further, since in the Itoh et al. reference the sensor is a permanent part of the system, failure rates and resulting repair costs will be increased.

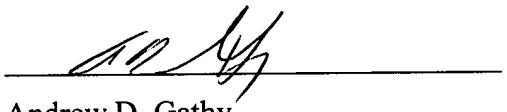
In view of the above, Applicant respectfully submits that the claimed invention is not anticipated (or rendered obvious) by the Itoh et al. reference, or any of the other prior art references of record, taken alone or in combination. The prior art simply fails to teach or suggest developing an injection strategy by temporarily detecting NOx emissions using a temporary NOx detector at each of a plurality of engine operating conditions. Moreover, since independent claims 1 and 18 are not anticipated, then claims 2-17 and 19-34 dependent thereon are believed to be allowable.

Further remarks regarding the asserted relationship between Applicants' claims and the prior art are not deemed necessary, in view of the foregoing discussion. Applicants' silence as to any of the Examiner's comments is not indicative of acquiescence to the stated grounds of rejection.

Conclusion

In view of the above, entry of the present amendment and reconsideration and allowance of each of the claims is respectfully requested. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicant's undersigned attorney.

Respectfully submitted,



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Attachments

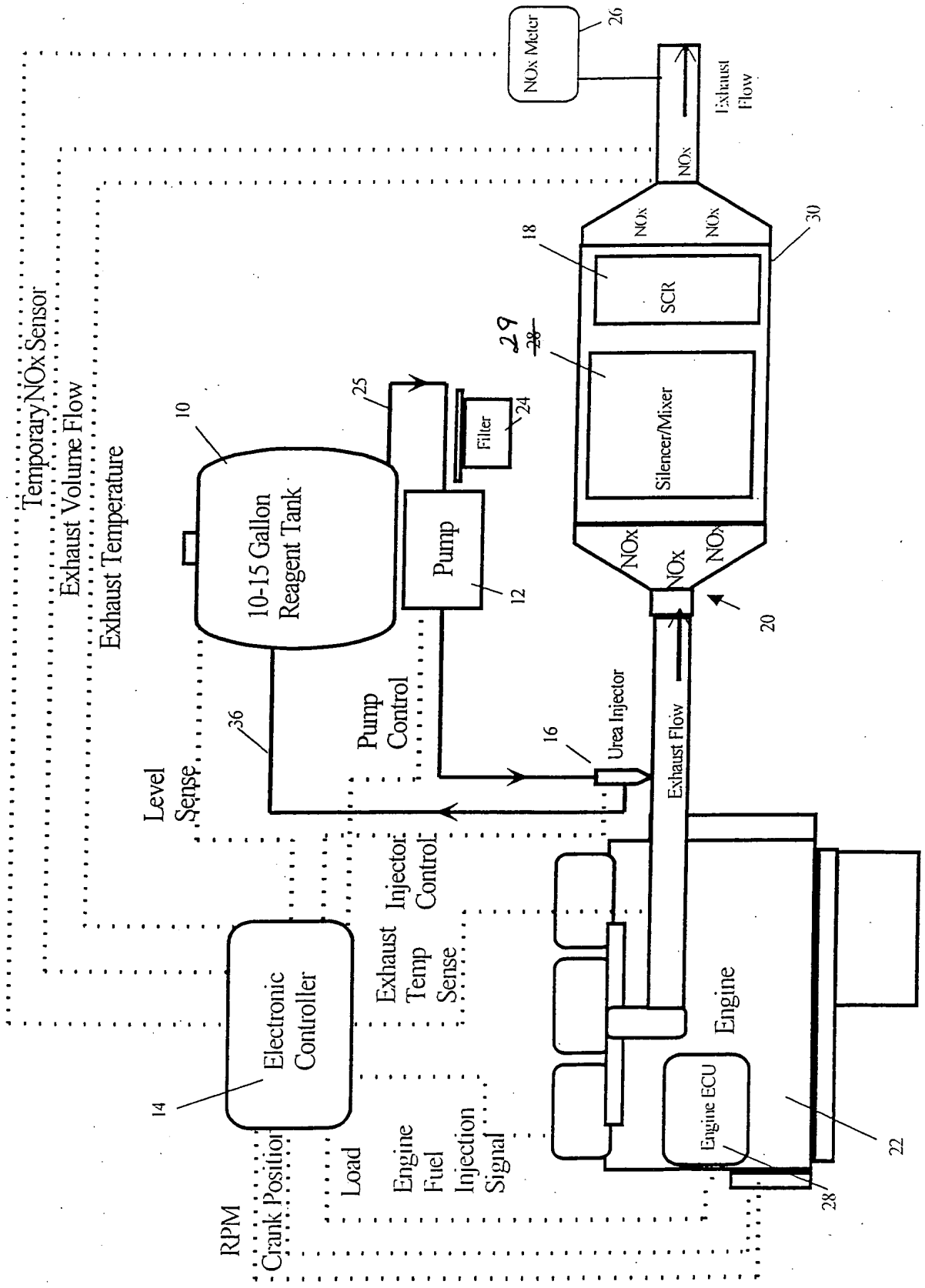
NOx Meter
26
Exhaust Flow
NOx
NOx
NOx
30
18
SCR
29
28
Silencer/Mixer
NOx
NOx
NOx
20
25
24
Filter
10
10-15 Gallon Reagent Tank
Pump
12
Pump Control
36
Level Sense
16
Urea Injector
Exhaust Flow
Temporary NOx Sensor
Exhaust Volume Flow
Exhaust Temperature
Injector Control
Exhaust Temp Sense
Electronic Controller
14
Engine
Engine ECU
22
28
RPM
Crank Position
Load
Engine Fuel Injection Signal

FIG. 1